# Work Order ID 112955

*February-10-14 3:07:17 PM*

*112955*



**Item ID:** D2065 **Accept** *N900040100* **Setup Start** *NS1*

**Revision ID:** **Stop** *NS2*

**Item Name:** Mirror Arm

**Start Date:** 2/10/14 **Start Qty:** 4.00 *4*

**Required Date:** 2/10/14 **Req'd Qty:** 4.00 *4*

**Reference:**

**Cust Item ID:**

**Customer:**

**Run Start** *NR1*

**Stop** *NR2*

**Approvals:** **Process Plan:** MLJ **Date:** 14-02-11 **Tooling:** _____ **Date:** _____

**QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|---|---|---|---|---|---|---|---|
| **Draw Nbr** | **Revision Nbr** | | | | | | | | |
| D2065 | Rev C | | | | | | | | |
| 100 | | 0.00 | | | | | | | |
| *100* | Small Fab | | | | | (4) | ____ | ____ | FF 14-03-04 |
| Small Fab | **Memo** | 0.00 | | | | | | | |
| Small Fab | 1-Punch 1/2" OD x .049" Wall 304/316 SS as per Dwg D2065 (per D2727) using DT8012.<br>Note: 1 end only<br>2-Cut to length as per Dwg D2065<br>3-Form as per Dwg D2065 and template DT8251<br>4-Drill 0.188" Dia holes as per Dwg D2065 using drill jig DT8779 and template | | | | | | | | |
| 110 | QC5- Inspect part completeness to step on W/O | 0.00 | DAS 27 9/89 14/3/4 | | | 4 | ____ | ____ | ____ |
| *110* | **Memo** | 0.00 | | | | | | | |
| QC<br>Quality Control | | | | | | | | | |

DQA: _____ Date: _____

# WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

**DISPOSITION**

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

**AGAINST DEPARTMENT/PROCESS**

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

| Root Cause | | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---|---|---|---|---|---|---|---|---|---|---|
| Design | ☐ | | | | | | | | | |
| Doc/Data | ☐ | | | | | | | | | |
| Equip/Tooling | ☐ | | | | | | | | | |
| Handling/Pre | ☐ | | | | | | | | | |
| Material | ☐ | | | | | | | | | |
| Operator | ☐ | | | | | | | | | |
| Offset/Setup | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Transport | ☐ | | | | | | | | | |
| Unapproved | ☐ | | | | | | | | | |

**FAULT CATEGORY**

**Landing Gear**

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

**General**

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function

☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence

☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge

☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled

☐ Other

_____
_____
_____

**Item ID:** D2065 **Accept** *N900040100* **Setup Start** *NS1*
**Revision ID:** **Stop** *NS2*
**Item Name:** Mirror Arm

**Start Date:** 2/10/14 **Start Qty:** 4.00 *4*
**Required Date:** 2/10/14 **Req'd Qty:** 4.00 *4*
**Reference:**

**Cust Item ID:**
**Customer:**

**Run Start** *NR1*
**Stop** *NR2*

**Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
**QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|---|---|---|---|---|---|---|---|
| 120 *120* Powdercoat Powder Coating | Black Sandtex(Ref:4.3.5.7) per QSI005 4.3 M126778. | 0.00 | | | | 4 | 0 | 14-3-10 | DAS 34 9-89 |
| | **Memo** START TIME: 9:10 OVEN TEMPERATURE: 320° FINISH TIME: 9:40 *****MASK OPEN END OF TUBING**** | 0.00 | | | | | | | |
| 130 *130* QC Quality Control | QC3- Inspect Part Finish | 0.00 | | | | 4 | | | DAS 27 9-89 |
| | **Memo** | 0.00 | | | | | | | |
| 140 *140* Packaging Packaging | Identify as per dwg & Stock Location: ST 27 | 0.00 | | | | NX | | 14-3-10 | DAS 26 9-89 |
| | **Memo** | 0.00 | | | | | | | |

DQA: _____ Date: _____

DART AEROSPACE

# WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

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Part No. _____

NCR No. _____

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Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

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| Doc/Data | ☐ | | | | | | | | | |
| Equip/Tooling | ☐ | | | | | | | | | |
| Handling/Pre | ☐ | | | | | | | | | |
| Material | ☐ | | | | | | | | | |
| Operator | ☐ | | | | | | | | | |
| Offset/Setup | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Transport | ☐ | | | | | | | | | |
| Unapproved | ☐ | | | | | | | | | |

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☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

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☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

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**Item ID:** D2065 **Accept** *N900040100* **Setup Start** *NS1*
**Revision ID:** **Stop** *NS2*
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|---|---|---|---|---|---|---|---|---|---|
| 150 | QC21- Final Inspection - Work Order Release | 0.00 | | | | | | | |
| *150* | | | | | | | | | |
| QC | **Memo** | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

MCS 14-03-11

MF
14-3-14

DQA: _____ Date: _____

# WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

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| Operator | ☐ | | | | | | | | | |
| Offset/Setup | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Transport | ☐ | | | | | | | | | |
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_____
_____
_____

# Picklist Print

*February-10-14 3:07:16 PM*



**Work Order ID:** 112955

**Parent Item:** D2065 **Start Date:** 2/10/14 **Required Date:** 2/10/14

**Parent Item Name:** Mirror Arm **Start Qty:** 4.00 **Required Qty:** 4.00

**Comments:** IPP: E02.04.15Added Dwg Rev.B1NG
IPP Rev:F 08-07-24 revC as per dwg (ecn 08-504) DD verified by:EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M304TR0.500W.049**<br>304 RD Tube .500 x .049W | | Purchased | No | | | 120 | f | 271.3340 | **1.7** | **8** | FF | 14-03-04 | |

| Location | Loc Qty | Loc Code |
|---|---|---|
| MAT017 | 271.334 | |
| M127937 | 271.334 | |

DQA: _____ Date: _____

DART AEROSPACE

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| Material | ☐ | | | | | | | | | |
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| Offset/Setup | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Transport | ☐ | | | | | | | | | |
| Unapproved | ☐ | | | | | | | | | |

**FAULT CATEGORY**

**Landing Gear**

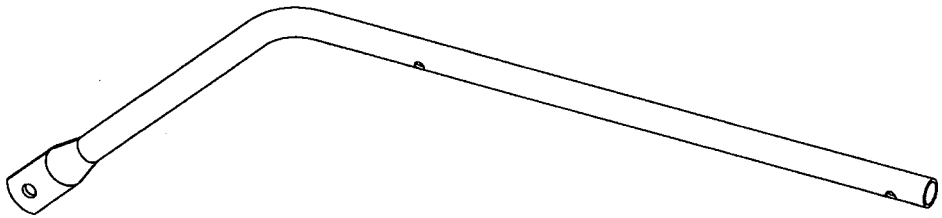
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☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

_____
_____
_____

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 112955 MLO
14-02-11



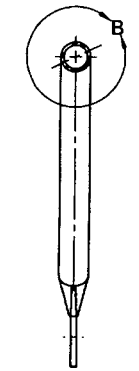
**D2065 ARM**

RELEASED
08.07.23.17

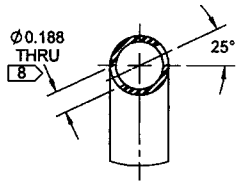
| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| C | REDRAWN IN SOLIDWORKS; INCORPORATED REV. B1 (FINISH ADDED VIA HAND CHANGE) (ZN A6-2); ADD D2065F CUT LENGTH DETAIL FOR D2065 (ZN B3-2); ADD R1.50 DIMENSION (ZN D5-2); Ø0.500 X 0.049 WALL WAS Ø0.500 X 0.035 WALL (ZN A5-2); REASON: Ø0.500 X 0.035 WALL TUBING USED ON D2010 IS CRACKING DURING SERVICE | PH | 08.06.13 |
| B | RE-DESIGN | BW | 96.02.06 |
| A | NEW ISSUE | BW | 92.03.12 |

| | | | |
|---|---|---|---|
| DESIGN | BW | DART AEROSPACE LTD | |
| DRAWN | PH | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | | DRAWING NO. D2065 | REV. C |
| MFG. APPR. | | | SHEET 1 OF 2 |
| APPROVED | | TITLE ARM | SCALE NTS |
| DE APPR. | | | |
| DATE | 08.06.13 | | |

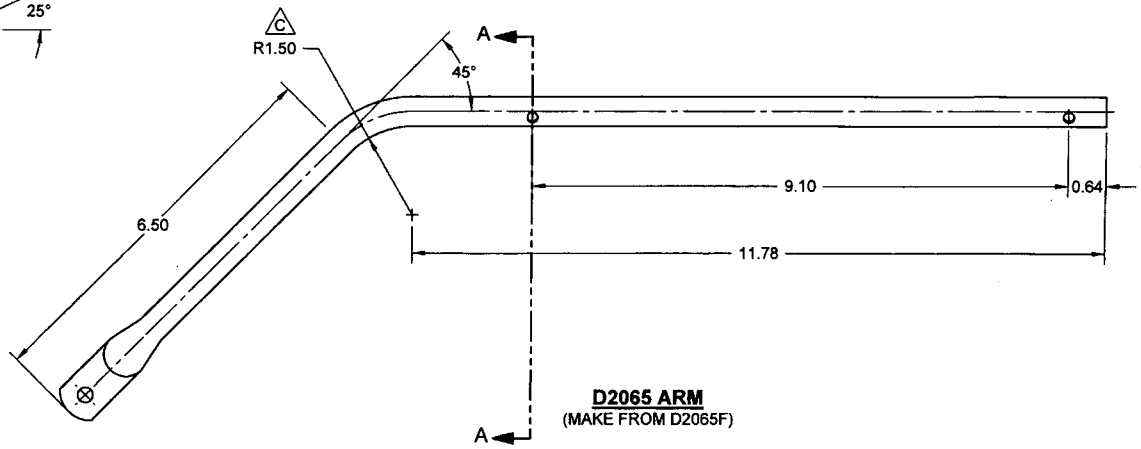
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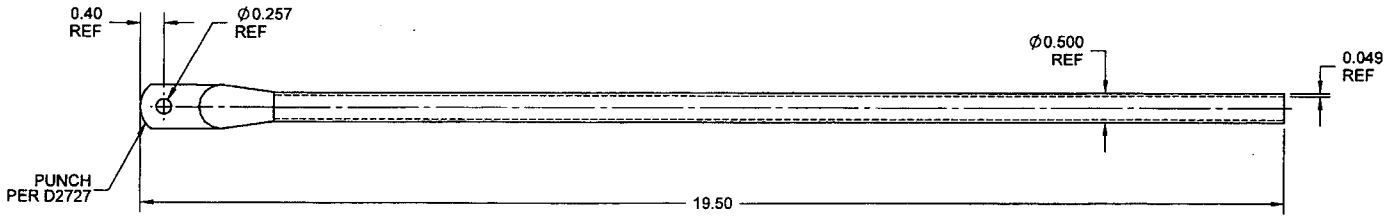

SECTION A-A




**DETAIL B**
SCALE 3X
2 PL




**D2065 ARM**
(MAKE FROM D2065F)




**D2065F ARM CUT LENGTH DETAIL** C

RELEASED
08.07.23

NOTES:
1) MATERIAL: D2065F: AISI 304/316 SS SEAMLESS ROUND TUBING, Ø0.500 X 0.049 WALL (REF DART SPEC M304TR0.500W.049) C
2) FINISH: POWDER COAT BLACK SANDTEX (4.3.5.7) PER DART QSI 005 4.3 C
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT: 0.41 lbs
8) DRILL Ø0.188 AFTER BENDING

| | | |
|---|---|---|
| DESIGN | BW | **DART AEROSPACE LTD** |
| DRAWN | | HAWKESBURY, ONTARIO, CANADA |
| CHECKED | | DRAWING NO. D2065 REV. C |
| MFG. APPR. | | SHEET 2 OF 2 |
| APPROVED | | TITLE ARM SCALE NTS |
| DE APPR. | | |
| DATE | 08.06.13 | |

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# DART AEROSPACE LTD

| | | | |
|---|---|---|---|
| Description: | Mirror Arm | Work Order: | 112955 |
| Inspection Drawing: | D2065 | Rev: C | Part Number: D 2065 |

## INSPECTION SHEET

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|---|---|---|---|---|---|---|
| 11.78 | ± 0.030 | 11.78 | ✓ | | S Fab -07 | |
| 9.10 | ± 0.030 | 9.10 | ✓ | | " -07 | |
| 0.64 | ± 0.030 | 0.64 | ✓ | | " -14 | |
| 6.50 | ± 0.030 | 6.50 | ✓ | | " -07 | |
| 45° | 1° | 45° | ✓ | | " -10 | |
| 0.40 | ± 0.030 | 0.40 | ✓ | | " -14 | |
| ø 0.257 | Ref | 0.257 | ✓ | | " -14 | |
| 25° | 1° | 25° | ✓ | | " -05 | |

| Measured by: | Checked By: DAS 30 9-89 | QC inspector: DAS 27 9-89 | Engineering Approval (*if necessary*): |
|---|---|---|---|
| Date 14-03-04 | Date 14/03/04 | Date 14/3/4 | Date |